CLAIMS

1. A compound comprising alpha-(trichloromethyl-4-Pyridineethanol)(PETCM) and derivatives thereof.

2. The compound of claim 1, wherein said compound is alpha-(trichloromethyl-4-Pyridineethanol)(PETCM).

3. The compound of claim 1, wherein said compound is isolated by high throughput screening.

4. A method of identifying at least one protein which inhibits or activates an apoptopic pathway comprising the steps of:

a) preparing fractions of a cellular extract;

b) exposing said fractions to PETCM and determining whether apoptosis activation or inhibition occurs in each of said fractions;

c) purifying said fractions which exhibit apoptosis activation or inhibition upon exposure to PETCM; and

d) identifying from said purified fractions at least one protein, wherein said at least one protein inhibits or activates apoptosis in said apoptopic pathway.

5. The method of claim 4 wherein said at least one protein which activates apoptosis is selected from the group consisting of PHAPI, PHAP12a and PHAPIII.

6. The method of claim 4 wherein said at one protein which inhibits apoptosis is promothymosin-alpha.

7. A method of activating a caspase pathway in a cell comprising the step of exposing PETCM to said cell in an amount sufficient to effect said activation.

8. The method of claim 7, wherein said cell is mammalian.

9. The method of claim 8, wherein said mammalian cell is malignant.

10. The method of claim 9, wherein said malignant cell is selected from the group consisting of a colon cancer cell, a prostate cancer cell, a leukemia cell, a melanoma cell, a lymphoma cell, a cervical carcinoma cell and a glioblastoma cell.

11. The method of claim 7, wherein said caspase pathway is the caspace-3 pathway.

12. The method of claim 11, wherein said PETCM is exposed to said cell in a range of approximately 0.1 uM to 1.0 mM.

13. The method of claim 12, wherein said PETCM is exposed to said cell at a concentration of 0.2 mM.

14. A method of inducing apoptosome formation in a cell, wherein said formation is inhibited by ProT, comprising the step of exposing PETCM to said cell in an amount sufficient to effect said induction.

15. A method of inducing function of PHAP protein, in a cell, inhibited by prothymosin-alpha (ProT) comprising the step of exposing PETCM to said cell in an amount sufficient to induce said function.

16. A method of reversing inhibition of caspace-3 activation, in a cell, wherein said inhibition is induced by ProT, comprising the step of exposing PETCM to said cell in an amount sufficient to effect said reversal.

17. A method of negatively regulating caspase-9 activation in a cell comprising the step of exposing ProT to said cell in an amount sufficient to negatively regulate said activation.

18. A method of promoting caspase activation in a cell, subsequent to apoptosome formation, comprising administering PHAP protein to said cell in an amount sufficient to effect said activation.

19. A method of identifying regulators of apoptosome formation comprising the steps of:
a) preparing extracts of mammalian, malignant cells;
b) exposing said extracts to a probe, wherein said probe comprises a nucleotide sequence encoding prothymosin-alpha, for a time and under conditions sufficient for complexes to form between said probe and nucleic acid sequences in said extracts; and
c) detecting complex formation between said probe and said nucleic acid sequences in said extracts,

wherein said nucleic acid sequences encode regulators of apoptosome formation.